

Ph. D. position in DNA nanotechnology

Laboratory of Biosensors & Nanomachines (LBN)
Research group of Prof. Alexis Vallée-Bélisle
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Monitoring protein functions using DNA-based fluorescent nanoantennas

Starting date: Fall, 2022

Stipend: 19k/year (+ supplement for teaching assistant program)

Duration: 4 years

Project's description

The Laboratory of Biosensors & Nanomachines is looking for a highly motivated student to pursue research on DNA-based nanoantennas to monitor protein function, a new technology developed in the lab and published in Nature Methods (<https://www.nature.com/articles/s41592-021-01355-5>). The project involves the synthesis of a library of DNA-based fluorescent nanoantennas and the development/optimization of a screening method to better identify suitable nanoantennas for clinically relevant proteins (e.g., cancer). The project will also involve direct collaboration with experts in the field of protein-protein interaction, enzymology, and cancer.

Qualifications

The candidate must hold a master's degree in chemistry or biochemistry (or any related discipline) with good experience in fluorescence spectroscopy, protein-protein interaction, enzymology or DNA synthesis. Experience in protein characterisation, protein conjugation, drug screening, molecular docking and molecular dynamics simulation will also be valued.

Personal skills

- Creativity and capacity to think outside of the box
- Ability to work within a team and to collaborate with other research partners
- Proactive in problem-solving and troubleshooting
- Good aptitude in scientific communication (presentations and publications)
- Good mentoring skill (i.e., the candidate will have to supervise master and undergrad students)
- Highly motivated and organized
- Fluent in English (spoken and written)

How to apply

Interested candidates are invited to read our recent nanoantenna publication and submit: 1) a cover letter highlighting their background, any relevant expertise, and their interest towards the proposed project, including ideas on how to bring this technology to the next level; 2) a resume; and 3) the contact information of two referees. Please send your candidature to Prof. Alexis Vallée-Bélisle (a.vallee-belisle@umontreal.ca) with the title "Ph.D. candidate Nanoantenna 2022".